MICROSEMI CORP

FORM 4
(Statement of Changes in Beneficial Ownership)

Filed 9/20/2006 For Period Ending 9/20/2006

Address	2381 MORSE AVENUE
	IRVINE, California 92614
Telephone	949-221-7100
CIK	0000310568
Industry	Semiconductors
Sector	Technology
Fiscal Year	09/30

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FORM 4

[ ] Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. *See* Instruction 1(b).

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

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STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(f) of the Investment Company Act of 1940

1. Name and Address of Reporting Person *	2. Issuer Name **and** Ticker or Trading Symbol	5. Relationship of Reporting Person(s) to Issuer (Check all applicable)
LEIBEL DENNIS R (Last) (First) (Middle)	**MICROSEMI CORP [MSCC]**	__ **X** __ Director _____ 10% Owner _____ Officer (give title below) _____ Other (specify below)
2381 MORSE AVENUE (Street)	3. Date of Earliest Transaction (MM/DD/YYYY) **9/20/2006**	
IRVINE, CA 92614 (City) (State) (Zip)	4. If Amendment, Date Original Filed (MM/DD/YYYY)	6. Individual or Joint/Group Filing (Check Applicable Line) _ **X** _ Form filed by One Reporting Person ___ Form filed by More than One Reporting Person

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

1.Title of Security (Instr. 3)	2. Trans. Date	2A. Deemed Execution Date, if any	3. Trans. Code (Instr. 8)		4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)			5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4)	6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4)	7. Nature of Indirect Beneficial Ownership (Instr. 4)
			Code	V	Amount	(A) or (D)	Price			
Microsemi Common Stock (1)	**9/20/2006**		**M**		**5000**	**A**	**$7.825**	**5000**	**D**	
Microsemi Common Stock (1) (2)	**9/20/2006**		**S**		**5000**	**D**	**$26.827**	**0**	**D**	

Table II - Derivative Securities Beneficially Owned (*e.g.* , puts, calls, warrants, options, convertible securities)

1. Title of Derivate Security (Instr. 3)	2. Conversion or Exercise Price of Derivative Security	3. Trans. Date	3A. Deemed Execution Date, if any	4. Trans. Code (Instr. 8)		5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5)		6. Date Exercisable and Expiration Date		7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4)		8. Price of Derivative Security (Instr. 5)	9. Number of derivative Securities Beneficially Owned Following Reported Transaction (s) (Instr. 4)	10. Ownership Form of Derivative Security: Direct (D) or Indirect (I) (Instr. 4)	11. Nature of Indirect Beneficial Ownership (Instr. 4)
				Code	V	(A)	(D)	Date Exercisable	Expiration Date	Title	Amount or Number of Shares				
Non-Qual Stock Option Right to Buy (1)	**$7.825**	**9/20/2006**		**M**			**5000**	**5/14/2002**	**5/14/2012**	**Common Stock**	**5000**	**$7.825**	**103500**	**D**	

Explanation of Responses:

(1) This non-qualified stock option was granted pursuant to Microsemi Corporation's 1987 Stock Plan, which satisfies the requirements of Rule 16b-3. The option becomes exercisable immediately.

(2) Sale in accordance with 10B5-1 Program adopted December 1, 2005.

Reporting Owners

Reporting Owner Name / Address	Relationships			
	Director	10% Owner	Officer	Other
LEIBEL DENNIS R **2381 MORSE AVENUE** **IRVINE, CA 92614**	**X**			

Signatures

Debbie Weber, Attorney-in-Fact for Dennis R. Leibel	**9/20/2006**
** Signature of Reporting Person	Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

***** If the form is filed by more than one reporting person, *see* Instruction 4(b)(v).

****** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. *See* 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, *see* Instruction 6 for procedure.

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